

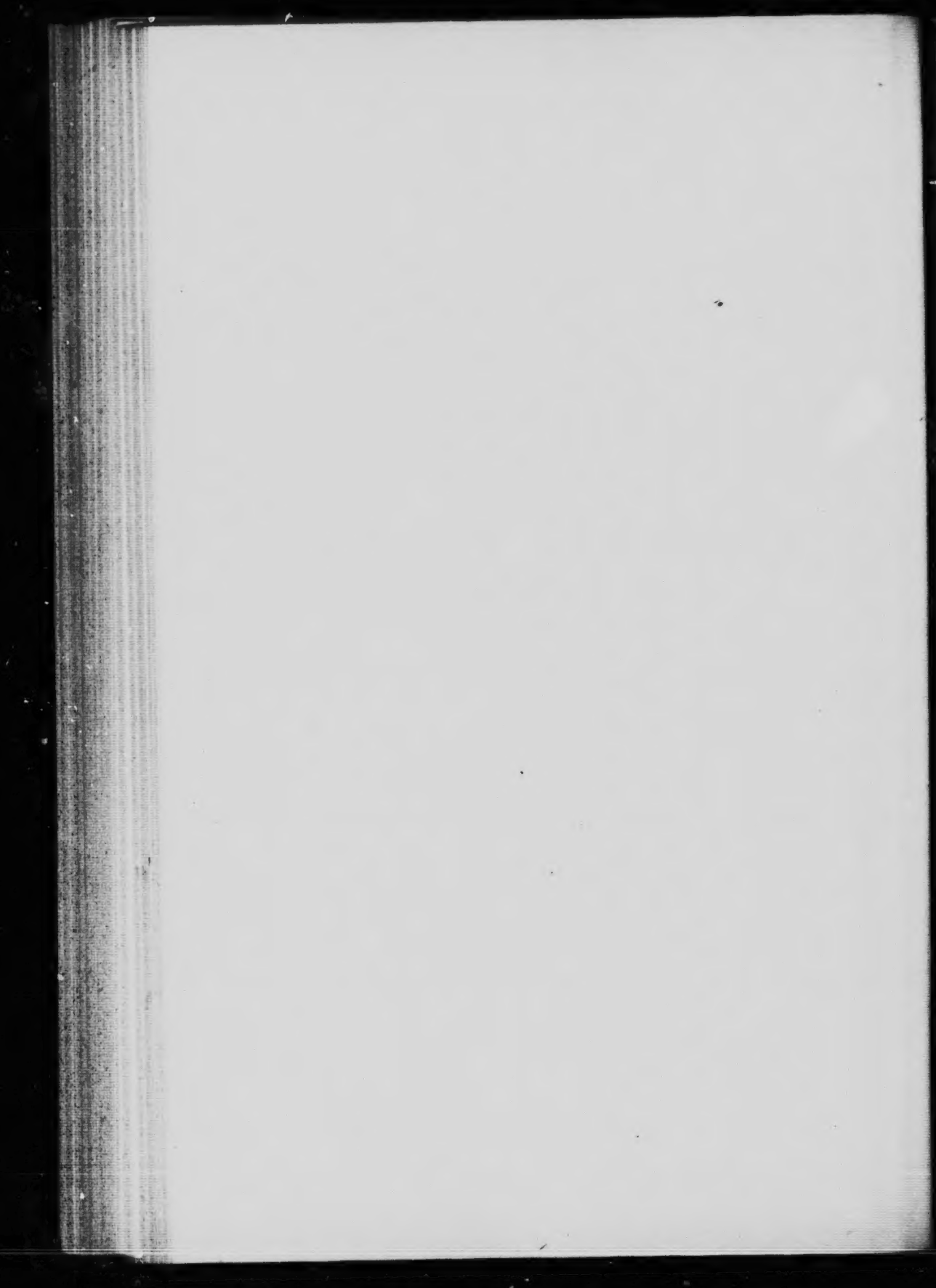
O. H. M. S.

B. J. Gerald
Deputy Minister.

LABORATORY
OF THE
INLAND REVENUE DEPARTMENT
OTTAWA, CANADA.

BULLETIN No. 189

CREAM.



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CREAM

OTTAWA, September, 23, 1909.

W. J. GERALD, Esq.,
Deputy Minister of In

SIR,—I beg to hand you a report of work done upon 65 samples of so called Cream purchased by our inspectors in 13 out of the 15 inspectoral districts of Canada.

This is the first time that a systematic collection of cream has been made, under the Adulteration Act. A collection of 367 milk samples, made in April 1906. (Bulletin 121) includes 29 samples of cream, whose fat content ranged from 12·63 to 33·51 per cent with an average of 22·76 per cent.

In view of the desirability of fixing standards for milk and allied food substances, under Sec. 26 of the Adulteration Act, it is important to discover what the public expects to get, when it buys cream. The work now reported shows that the public is offered, and accepts as cream an article varying in butter fat (the characteristic and the valuable component of cream) from above 42 to 11·10 per cent. Whether or not the public is satisfied with this condition of things is another matter.

In order that the great variations of value in market cream may be clearly apprehended, I here arrange the 64 samples analysed of the present collection, in serial order of butter fat content.

No. 36784.....	42.66 above 40 %	No. 35971.....	23.72 above 20 %
41513.....	41.27 "	41154.....	23.61 "
35972.....	40.12 "	41721.....	23.38 "
No. 41157.....	39.90 above 30 %	35583.....	22.92 "
36786.....	39.71 "	31340.....	22.61 "
40277.....	36.57 "	31342.....	22.40 "
36783.....	36.00 "	40279.....	22.29 "
36785.....	31.21 "	40278.....	22.22 "
41155.....	30.18 "	37694.....	21.77 "
974.....	30.00 "	41514.....	21.62 "
No. 41722.....	29.75 above 25 %	41723.....	21.61 "
41511.....	29.72 "	33566.....	21.22 "
41512.....	29.27 "	41264.....	21.18 "
36772.....	28.93 "	37693.....	20.40 "
39522.....	28.65 "	41725.....	20.07 "
41339.....	28.57 "	No. 41268.....	19.38 above 15 %
39524.....	28.05 "	41721.....	19.01 "
37695.....	27.89 "	41267.....	18.54 "
971.....	27.23 "	38559.....	18.31 "
41282.....	26.98 "	36587.....	18.13 "
37692.....	26.91 "	35586.....	17.60 "
39523.....	26.74 "	41343.....	17.36 "
40276.....	26.50 "	38525.....	17.00 "
41515.....	26.42 "	970.....	16.91 "
39521.....	25.98 "	35585.....	16.24 "
41265.....	25.76 "	35974.....	16.06 "
36773.....	25.49 "	35584.....	16.06 "
No. 41156.....	24.93 above 20 %	38557.....	15.92 "
41159.....	24.73 "	38558.....	15.83 "
35970.....	24.46 "	40280.....	15.37 "
36782.....	24.06 "	38556.....	11.77 above 10 %
		41341.....	11.42 "
		35973.....	11.10 "

In Bulletin 121, the late Chief Analyst suggests standards for cream as follows:—
Whipping cream, not less than 25 per cent. butter fat.

Table " " " 17.5 " " "

My impression is that it would be unwise to attempt the establishment of standards for different grades of cream. The time may come when legal standards of quality recognizing different grades within the species, may be justified; but, for the present, I think that the requirements of the Act, are met by the establishment of specific identity. If an article sold as wine, or coffee, or vinegar, &c., corresponds to the definitions respectively of wine, coffee and vinegar, the subordinate questions of value, from the point of view of the connoisseur, must be left to be dealt with by the purchaser himself. When the public asks for cream, it must get cream. The particular grade of cream is a matter to be settled between the buyer and seller. This leaves us face to face with the question, what is cream?

Some may say 'cream' begins where 'milk' ends. An extra rich milk may be regarded as a poor cream. This would seem to be the position taken by some vendors, because, although a milk containing 11 per cent of butter fat is quite exceptional, it is not unknown. (See Nos. 24, 65, 515, 517, 28644, &c., of Bull. 121). Were such a contention to be seriously considered, it would still be necessary to fix a minimum for fat in the article. The present report shows that only 3 samples out of 64 sold as cream, contain less than 15 per cent of fat. Twenty-nine samples reported in Bulletin 121, show an average of 22.76 per cent fat, with only one sample below 16 per cent. On the other hand, 75 per cent of these two collections (totalling 93 samples), show more than 20 per cent of butter fat in the article sold as cream.

The standard for cream established by the United States Department of Agriculture, (Circular 19, of June 26, 1906), is 18 per cent fat. Several States of the American Union have established independent standards, and these range from 15 to 30 per cent for cream. Great Britain has no legal standard for cream; but the following passage from a recent report to the Local Government Board (Food Report, No. 10, 1909) gives an idea of what is considered to be cream in England.

'None of the creameries which I visited (with two exceptions in the north of England to which reference will be made later) supplied cream containing less than 40 per cent of butter fat. In most cases the cream contained well above this quantity; about 50 per cent being a usual amount. Samples from two creameries showed on analysis as much as 59 per cent of fat. In general a somewhat higher fat content was observed in cream supplied by the firms visited in the south of England than in the north.'

It is my belief that no injustice will be done to the dealer, and that a much needed protection will be afforded to the consumer, if the following definition of cream be made legal:—

1. Cream is that portion of milk, rich in milk fat, which rises to the surface of milk on standing, or is separated from it by centrifugal force; is fresh and clean, and contains not less than eighteen (18) per cent of milk fat.

2. When guaranteed to contain a higher percentage of milk fat than eighteen (18) per cent, it must conform to such guarantee.

3. Cream must be entirely free from gelatine, sucrate of lime, gums, or other substances added with a view to give density, consistency or apparent thickness to the article.

4. Cream must contain no preservatives of any kind; nor any colouring matter, other than is natural to milk.

5. Evaporated cream, clotted cream, condensed cream, or any other preparation purporting to be a cream, (except ice cream), must conform to the definition of cream as given above, and must contain at least twenty-five (25) per cent of milk fat.

It is pretty well known that a number of articles called *Cream thickeners* are on the market. These are intended to be added to cream for the purpose of giving it an appearance of greater density and richness than it really possesses. Gelatine is a constituent of most of them; but calcium sucrate (Sucrate of lime) gum tragacanth and other substances are often present. Some of the Cream samples of this collection were examined for 'thickeners', and evidence of gelatine was quite definitely found in 4 samples; while reactions sufficiently clear to justify a declaration of *trace of gelatine* were obtained with 9 other samples.

Evidently the cream producers of Canada are not above suspicion of employing these entirely dishonourable methods of giving a fraudulent appearance of richness to the article. This mode of fraud is particularly harmful in cases where a Dairy Company, counts among its patrons, a few who are guilty of the use of thickeners. It may be the aim of such company to supply honest cream; but, by intermixing ignorantly, a few gallons of the sophisticated article, a whole day's output may be contaminated. Of course, in such case, the company must be held responsible, should adulteration be detected. It is quite true that the guilty patron of such a company could not possibly reap any advantage to himself, provided that his cream was sold on its fat content; but agents interested in the sale of these 'cream thickeners', have been known to so misrepresent them, as to lead the purchaser to believe that his cream was actually improved by their use. The only safeguard which a Dairy Company can have, is the periodical testing of its cream for these thickeners.

On our next collection of cream, I shall see that a systematic examination for cream thickeners is made.

I beg to recommend the publication of this report as Bulletin No. 189.

I have the honour to be, sir,

Your obedient servant,

A. MCGILL,
Chief Analyst.

BULLETIN No. 189—CREAM.

DO NOT WRITE IN THESE SPACES

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.		Name and Address of Manufacturer or Purchaser, as given by the Vendor.	Inspector's Report. (Is not an expression of opinion.)	RESULTS OF ANALYSIS.				Remarks and Opinion of the Chief Analyst.
				Quantity.	Price.			Total Solids, P.c.	Fat, P.c.	Solids not Fat, P.c.	No. of Sample.	

DISTRICT OF NOVA SCOTIA—R. J. WAUGH, INSPECTOR.

1909.					\$ c.							See prefatory letter.
Aug. 12....	Cream.....	41721	Acadia Dairy Co., Wolfville, N. S.	1 qt....	0 25	W. W. Pisco, Waterville, N. S.	.....	26 61	19 01	7 60	41721	
" 17....	"	41722	Scotia Pure Milk Co., Halifax, N. S.	14 pts..	0 30	Unknown	.....	36 67	20 75	6 92	41722	
" 18....	"	41723	I. S. Higgins, Halifax, N. S.	"	0 25	Wm. Moore, Shubenacadie, N. S.	.....	28 85	21 61	7 24	41723	
" 18....	"	41724	A. D. Johnson, Halifax, N. S.	"	0 25	G. Brenton, Stewiacke, N. S.	.....	30 79	23 38	7 41	41724	
" 18....	"	41725	"	"	0 25	A. G. Horne, Enfield, N. S.	.....	27 52	20 07	7 45	41725	

DISTRICT OF PRINCE EDWARD ISLAND—THEO. MOORE, INSPECTOR.

												See prefatory letter.
July 23....	Cream.....	38556	Mrs. Douglas Smith, Rustico Road.	14 pts..	0 12	Vendor.....	.....	20 18	11 77	8 41	38556	
" 23....	"	38557	Mrs. J. Mallett, Royalty Charlottetown.	"	0 15	" .....	.....	23 05	15 92	7 13	38557	
" 23....	"	38558	W. S. Bowman, Royalty Charlottetown.	"	0 15	" .....	.....	23 24	15 83	7 41	38558	
" 23....	"	38559	Mrs. J. P. Wood, Alexandria.	"	0 15	" .....	.....	25 82	18 31	7 51	38559	
" 23....	"	38560	Mrs. E. K. Scott, North River.	"	0 15	" .....	.....	28 77	21 22	7 55	38560	

DISTRICT OF NEW BRUNSWICK—J. C. FERGUSON, INSPECTOR.

July 20...	Cream....	33021 Maritime Dairy Co., St. John, N.B.	St. 1 qt....	0 30	Maritime Dairy Co., St. John, N.B.	32 68	25 98	6 70	33021
" 26...	"	33022 St. John Creamery Co., St. John, N.B.	"	0 30	Several Farmers	25 84	28 65	7 19	33022
Aug. 7...	"	33023 C. J. Bodkin, Fredericton, N.B.	"	0 30	"	23 57	26 74	6 83	33023
" 17...	"	33024 Maritime Dairy Co., Ltd., Sussex, N.B.	"	0 25	"	34 85	28 05	6 80	33024
" 18...	"	33025 G. O. Stratton, Moncton, N.B.	"	0 30	Moncton Pasteurized Milk Co., Sunny Brae, N.B.	24 46	17 00	7 46	33025

DISTRICT OF QUEBEC—E. BELAND, INSPECTOR.

July 16...	Cream....	36782 Joseph Mailhout, Beauport.	1½ pts.	0 20	Vendor	30 80	24 06	6 74	36782
" 16...	"	36783 Mad. Grenier.	"	0 20	"	42 05	36 00	6 05	36783
" 16...	"	36784 Joseph Parent.	"	0 20	"	49 20	42 06	6 54	36784
" 16...	"	36785 Francis Bedard.	"	0 20	"	37 57	31 21	6 26	36785
" 16...	"	36786 Veuve Compagn.	"	0 20	"	45 84	39 71	6 13	36786

DISTRICT OF ST. HYACINTHE—J. C. ROULEAU, INSPECTOR.

July 20...	Cream....	970 W. J. Gobeil, Farnham.	1 qt.	0 20	Vendor	24 43	16 91	7 52	970
" 23...	"	971 A. Mathieu, Victoriaville.	"	0 30	"	33 53	27 23	6 60	971
" 21...	"	972 H. Feltier, Rapid Plat, St. Hyacinthe.	"	0 25	"	36 07	28 93	7 14	972
" 21...	"	973 B. Lemieux, Ravy St. Francois, St. Hyacinthe.	"	0 25	"	33 01	25 49	7 52	973
" 21...	"	974 Fra. Belanger, Rapid Plat, St. Hyacinthe.	"	0 25	"	36 38	30 00	6 58	974

DISTRICT OF MONTREAL—J. J. COSTIGAN, INSPECTOR.

July 21...	Cream....	40276 Standard Dairy Co., Montreal.	1 qt.	0 30	E. L. Magne, Warden, P.Q.	23 54	26 50	7 04	40276
" 23...	"	40277 G. Jubin, 90 Roy St., Montreal.	"	0 40	Unknown	42 80	36 57	6 23	40277
" 23...	"	40278 Rene, Leonard, 91 Lagache St. E., Montreal.	"	0 30	Montreal Dairy Co.	29 20	23 22	6 98	40278
" 23...	"	40279 P. Brunet, 159 Lagache St. E., Montreal.	"	0 30	"	29 35	22 29	7 06	40279
" 23...	"	40280 Mrs. Pelletier, 645 Demon- tigny St. F., Montreal.	"	0 24	Montreal Dairy	23 19	15 37	7 82	40280

BULLETIN 189—CREAM.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.		Name and Address of Manufacturer or Furnisher, as given by the Vendor.	Inspector's Report. (Is not an expression of opinion.)	RESULTS OF ANALYSIS.			Remarks and Opinion of the Chief Analyst.
				Quantity.	Price.			Total Solids, per cent.	Fat, per cent.	Solids not Fat, per cent.	No. of Sample.

DISTRICT OF OTTAWA—J. A. RICKEY, INSPECTOR.

1900.											
Aug. 20	Cream	41264	The Ottawa Dairy Co., Ltd., Ottawa.	1 qt.	0 40	Vendors	16 per cent.	28 35	21 18	7 37	41264
" 20	"	41265	The Ottawa Dairy Co., Ltd., Ottawa.	"	0 50	"	24 "	32 84	25 78	7 06	41265
" 20	"	41267	The Alderney Dairy Co., Ltd., Ottawa.	"	0 40	Experimental Farm, Ottawa.		26 35	18 54	7 81	41267
" 23	"	41268	R. Allen, Ottawa.	"	0 30	Vendor		27 00	19 38	7 62	41268
" 25	"	41282	F. Clarke, Deschenes, P.Q.	"	0 50	"	25 per cent.	33 98	26 98	7 00	41282

DISTRICT OF KINGSTON—JAS. HOGAN, INSPECTOR.

Aug.	Cream	41153	Kirk & Lee, Kingston.	1 qt.	0 25	Vendors		37 06	30 18	6 88	41153
" 4	"	41156	T. E. Auld, "	"	0 40	Vendor		32 33	24 93	7 40	41156
" 4	"	41157	Kirk & Lee, "	"	0 40	Vendors		46 16	39 90	6 26	41157
" 4	"	41158	J. Knight, "	"	0 30	Vendor		31 22	23 61	7 61	41158
" 4	"	41159	G. Mason, "	"	0 40	A. Gibbony		32 32	24 73	7 59	41159

DISTRICT OF TORONTO—H. J. DAGER, INSPECTOR.

Aug. 11	Cream	41339	Hamilton Dairy and Cream Co., Hamilton.	1 qt.	0 25	Vendors	24 per cent.	35 27	28 37	6 70	41339
" 11	"	41340	The Coverdale Creamery Co., Hamilton.	"	0 35	"		29 90	22 61	7 29	41340
" 17	"	41341	John Tingle, 314 Gerrard St. E., Toronto.	"	0 25	Vendor	18 per cent.	19 02	11 42	7 60	41341
" 17	"	41342	J. V. Moore, 199 Wilton Ave., Toronto.	"	0 40	"		30 07	22 40	7 67	41342
" 17	"	41343	H. Taylor, 235 Church St., Toronto.	"	0 40	"		25 18	17 36	7 82	41343

" 17....	"	" 0 40	"	"	30 01	22 40	7 82	41342
" 17....	"	" 0 40	"	"	25 18	17 36		41343

DISTRICT OF WINDSOR—JNO. TALBOT, INSPECTOR.

July 21....	Cream.....	35970 Geo. Peters, London	1 qt....	50 Geo. Barker, London Tp.	30 60	24 46	6 14	35970
" 21....	"	35971 J. Fawkes, London	"	30 W. Sloan, "	30 76	23 72	7 04	35971
" 21....	"	35972 J. W. Griffiths, London	"	35 Vendor	46 24	40 12	6 12	35972
" 21....	"	35973 G. W. Kent, London	"	30 Saul Cumlin.	18 68	11 10	7 58	35973
" 21....	"	35974 J. D. Ross, London	"	20 Vendor	23 34	16 06	7 78	35974

5760—12

DISTRICT OF CALGARY—R. W. FLETCHER, INSPECTOR.

July 30....	Cream.....	35583 Nicholls & Shepherd, Cal.	1 qt....	0 40 Vendors	30 58	22 92	7 66	35583
" 30....	"	35584 Bud Palleen, Calgary.....	"	0 40 Vendor	24 46	16 06	8 40	35584
" 30....	"	35585 T. Laycock & Co., Calgary.....	"	0 40 Vendors.....	24 31	16 24	8 07	35585
" 30....	"	35586 W. Miller, Calgary.....	"	0 40 Vendor.....	25 68	17 60	8 08	35586
" 30....	"	35587 Sadler & Gordon, Calgary.....	"	0 40 Vendors.....	26 33	18 13	8 20	35587

DISTRICT OF VANCOUVER—JNO. F. POWER, INSPECTOR.

July 23....	Cream.....	37691 City Dairy, Vancouver	30 oz....	0 45 Vendor	33 38	26 91	6 47	37691
" 23....	"	37692 Richmond Dairy, "	"	0 50 "	27 43	20 40	7 03	37692
" 23....	"	37693 F. Scott, "	"	0 50 Richmond Dairy, Van- couver.....	28 82	21 77	7 05	37693
" 24....	"	37694 Crystal Dairy, "	"	0 50 Vendor.....	34 41	27 89	6 52	37694
" 24....	"	37695 Crown Dairy, "	"	0 40 "				37695

DISTRICT OF VICTORIA—D. O'SULLIVAN, INSPECTOR.

July 30....	Cream.....	41511 City Dairy, Victoria	1 qt....	0 40 B. C. Milk Condensing Co., New Westminster	36 60	29 72	6 88	41511
" 30....	"	41512 Royal Dairy, "	"	0 30 "	36 24	29 27	6 97	41512
" 31....	"	41513 Victoria Creamery Assn., Victoria.....	"	0 50 "	47 23	41 27	5 95	41513
Aug. 5....	"	41514 Windsor Grocery Co., Vic- toria.....	"	0 60 Alfred Few, Victoria, B.C.....	28 84	21 62	7 22	41514
" 6....	"	41515 D. H. Ross & Co., Victoria, B.C.....	"	0 60 E. Freeman, Victoria, B.C.....	34 01	26 42	7 59	41515

* Sample broken in transit.